

A MODERN APPROACH TO THE RAILWAY TRACKS SURVEY BY MEANS OF THE RDS AUTOMATIC SYSTEM



The history of rail transport dates back nearly 500 years, and includes systems with men or horses power and rails of wood or stone. Modern rail transport systems first appeared in England in the 1820s. These systems were the first practical forms of mechanized land transport, and they remained such as the primary form for the next 100 years before the coming of motorcars. Railways quickly became essential to the swift movement of goods that was needed for industrialization. After the Second World War the large demand of transportation imposed to improve and develop the existing railway networks in order to meet the exacting demand of high comfort and fast speed. The professional approach to design and construction method includes also the realization of advanced monitoring systems.

RDS, Railway Deformation System, is a non-conventional monitoring system designed for automatic survey of the longitudinal deformation of the rail tracks and the twisting of the sleepers. This system which consists of a chain of sensors directly positioned on tracks has been successfully installed in several projects. This paper describes a recent case history of the RDS application for monitoring a wide line of the high speed railway under construction in Italy between Milan and Bologna, where large soil settlement occurred. In this application, which also includes the installation of an automatic data acquisition unit, RDS has permitted real time monitoring and remote reading processing with data available on Web. Compared to the traditional systems, including topographic surveys, RDS offers to the Customers either high performances and significant reduction of the operating costs.

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